Randomised controlled trial

A checklist-based tool for postoperative complications may improve and standardise patient care

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Implications for practice and research

- The use of checklists improved the management of postoperative complications by providing a standardised, evidence-based approach to clinical scenarios. They also improved communication and teamwork within multidisciplinary teams.

- As these improvements were observed in a simulated environment, clinical implementation studies are required to validate the results.

Context

The postoperative phase of gastrointestinal surgery is fraught with complications, with significantly high morbidity rates. The management of these complications is extremely variable, being affected by a number of factors such as time constraints, staffing and adherence to best-practice guidelines. Checklists have successfully been introduced into other areas of surgery and serve to standardise approaches to ensure optimal patient care and safety. Simulated environments are often used to introduce new concepts and practices. They are a safe place to learn and teach new teams, allowing students to practice without compromising patient safety.

Methods

Twenty surgical registrars were randomised to either a control or intervention group. Both groups conducted an initial ward round of three patients, each with a different common postoperative complication, in a simulated environment. The intervention group then underwent training in using the checklist and both groups then repeated the ward round of three patients on different days and times. The checklist was made available to use only for the intervention group.

The primary end point was the rate of failure to execute critical management steps, as recorded by a direct observer. Furthermore, thoroughness of patient assessment and management were assessed using the Surgical Ward Care Assessment Tool (SWAT). Non-technical performance, such as communication skills, was assessed using the Ward Non-Technical Skills scale (W-NOTECHS). Finally, prescribing errors were noted and the intervention group's perception of the checklist was surveyed using a questionnaire.

Findings

Initially, failure rates in completing crucial management points were 58% and 67% (p=0.988). Similarly, there were no significant differences in the technical and non-technical performance of the groups.

There was a huge difference in failure rates in the second round: 0% in the intervention group versus 60% (p<0.001). There were improved SWAT scores for patient management in the intervention group, but there was no difference in patient assessment or non-technical skills. The W-NOTECHS score improved within the intervention group following the implementation of the checklist, as did the rate of prescribing errors. Questionnaire responses about the checklist were all positive.

Commentary

This study demonstrated yet again that the implementation of a checklist can vastly improve processes and impact patient safety. In 2006, a checklist was introduced into an intensive care unit and eradicated catheter-associated infections.[1] The WHO surgical safety checklist has been widely adopted after it dramatically decreased intraoperative morbidity and mortality in a case series.[2] Checklists are simple tools that can standardise processes and approaches, ensuring that patients receive the best possible care at all times. However, they do not replace clinical judgement and experience, and should not drive an inflexible routine into the ward round.

Ward rounds can be chaotic, especially on busy surgical wards with all the inherent time pressures and perhaps it is not surprising that there is such variability in the pick-up rates of postoperative complications. A telling point in this study is that all members of the intervention group chose to use the checklist in their second ward rounds. Previous feedback has shown that checklists provide reassurance to doctors that quality and standards of care are maintained.[3]

The improved W-NOTECHS score reflects improved teamwork and communication following the use of the checklist in the intervention group. Checklists can only be effectively implemented if members of the ward round team are clear on their roles and feel able to prompt and remind colleagues of missed points. This requires a high level of trust and respect within a team, and feedback from teams using checklists have been positive.[3] [4]

It will be interesting to see if these vast improvements in patient safety will be replicated in clinical implementation studies.

Competing interests None.

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